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BUMED NEWS LETTER

a digest of timely information

Editor - Captain F. W. Farrar. (MC). U.S.N.

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Circular Letters:

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Re Sulfonamide Urolithiasis: After the administration of a sulfonamide, as the glomerular filtrate passes down the kidney tubules, and base and water are reabsorbed, the urinary pH number drops, and the concentration of the sulfonamide increases. The resultant concentration of the particular sulfonamide excretion product may exceed its normal solubility, and precipitation may occur, or the sulfonamide supersaturated urine may pass out of the urinary tract in a metastable condition. Because the presence of nuclei, upon which crystals may grow, will cause precipitation from supersaturated solutions, changes in the structure and function of the kidney which furnish a nidus for crystal growth may determine the development or nondevelopment of concretions within the urinary tract.

Accordingly, efforts to prevent sulfonamide urolithiasis have been directed along the lines of (1) adequate fluid intake and adequate kidney fluid output, (2) the development of compounds with not only increased therapeutic effectiveness but also which, as well as their derivatives, as excreted, possess favorable solubility characteristics in urines with pH numbers readily achieved in clinical practice, and (3) control of sulfonamide blood levels.

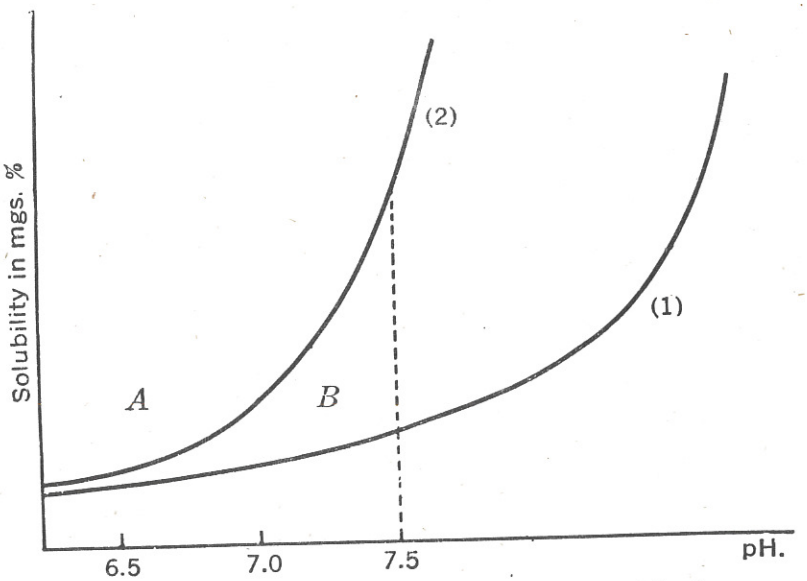
When acetylsulfapyridine uroliths were first reported, Antopol and Robinson suggested that the administration of large volumes of water caused solution, with removal, of the stones. This concept has been universally accepted, and all workers, both experimental and clinical, require a controlled daily fluid intake along with the administration of a sulfonamide.

The solubility characteristics of the newer drugs, sulfadiazine, sulfamerazine, sulfapyrazine, etc., are of interest in connection with the prevention of urolithiasis. Unlike sulfapyridine and sulfathiazole, the newer sulfonamides yield acetylated derivatives which are slightly more soluble than the parent drugs. However, this fact has been too greatly stressed, and thereby it has been implied that, because of the increased solubility of the acetylated product, the use of these drugs effects a lowered incidence of urolithiasis. These new drugs, when properly administered, do yield a lowered incidence of stones, but this cannot be attributed simply to the increased solubility of the acetylated derivative as compared with the parent drug, for the solubility differences are relatively small; and in no case is the solubility of the acetylated product much greater than twice that of the parent drug at the pH of body fluids. When consideration is given to the fact that the acetylated derivatives are not extensively reabsorbed, but tend, rather, to be cleared rapidly in the kidney, this difference in solubility grows somewhat in significance. On the other hand, when consideration is given to the fact that it <u>is</u> possible for the parent drug, a hydroxyl derivative, the acetylated sulfonamide, or mixtures of these to be precipitated in the urinary tract, it is clear that the successful use of the newer sulfonamide

drugs is not made possible solely by a slight difference in the solubility of the the free and acetylated products.

Gelmo, who first synthesized sulfanilamide, recognized that it was both a weak base and a weak acid, and as such would form relatively water-soluble salts with acids and bases. Although these properties were generally known and hydrochlorides and sodium salts had been prepared, the preparation by Marshall of the sodium salt of sulfapyridine for therapeutic administration appears conspicuously to have focused clinical attention upon the salt-forming properties of the sulfonamide drugs. Kawaichi and Barnes concluded that since it was possible to form water-soluble sodium salts for parenteral administration, it would also be possible to dissolve uroliths by administering alkali and recommended alkali therapy in the treatment of renal lithiasis resulting from sulfonamide drugs. Climenko and Barlow reported that renal impairment induced in the monkey by sulfathiazole could be prevented by the administration of sodium bicarbonate with the sulfathiazole.

It was not, however, until the newer sulfonamide drugs had been synthesized that alkali therapy was placed upon a quantitative basis. Bell and Roblin reported the anionic dissociation constants of a large series of sulfonamide drugs. These constants qualitatively express the relative solubilities of the drugs at a fixed temperature and at a pH fixed within the range of anionic dissociation. They also indicate to what degree the solubility of a given sulfonamide may be expected to increase with increments of the pH number. The salient features of these relationships are illustrated in the following figure:



pH-solubility relationship of sulfonamide drugs.

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Curves (1) and (2) may be taken to represent the type of solubility data obtained with two different classes of sulfonamide drugs. Curve (1) represents the first class which includes sulfanilamide, sulfapyridine and sulfathiazole. Curve (2) represents the second class which includes the newer drugs such as sulfadiazine, sulfamerazine, sulfapyrazine, etc. As indicated, the solubility of the drugs in both classes increases with increasing pH numbers, but the solubility characteristics of the two classes of drugs differ importantly. The solubility of the drugs in the first group is not greatly increased with increasing pH numbers unless the alkalinity exceeds the physiologic range. These drugs represented by solubility curve (1) undergo some slight dissociation as acids at the pH of body fluids, and alkali therapy may help to prevent precipitation within the urinary tract (more particularly in the case of sulfathiazole), but the influence of alkali cannot be great. On the other hand, the solubility of the drugs in the second group is decidedly and favorably influenced by alkali therapy. These drugs undergo a marked increase in solubility with pH number increments falling within the physiologic range; and precipitation of these drugs within the urinary system can within limits, be prevented by increasing the alkalinity of the urine.

An example will serve to illustrate the response of both groups of drugs to alkali therapy. After administration, the drug is absorbed and a blood concentration is built up. On passing through the glomeruli the drug passes into the protein-free filtrate at a pH of about 7.4. Following the reabsorption of water and base in the tubules, the urinary concentration of the drug may climb from around 2 mg. per cent to as high as 300 mg. per cent, and the pH number may fall as low as 5.5. If the solubility of the drug is exceeded at any point, precipitation may occur. Referring to the figure, it is clear that with drugs of either class, if the urine possesses a concentration and pH number indicated by point A, which lies above both curves, precipitation may be anticipated. If, however, alkali is administered together with the sulfonamide, and the pH number of the urine is increased to point B with the concentration of sulfonamide remaining as before, precipitation will not or might not occur (depending upon the drug). If the drug is a member of the second group, point B will fall below the group solubility curve (2), the urine will not be saturated, and precipitation will not occur. But, if the drug is a member of the first group, point B will remain above the group solubility curve (1), representing a state of supersaturation, and in the absence of metastability precipitation will occur.

The curves presented are for only the unchanged sulfonamide drugs, but the same argument holds with the acetylated sulfonamides, and although no data on solubility are available for the hydroxysulfonamides, it can be predicted that these substances will yield similar if not more pH-sensitive solubility curves.

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With the use of the newer sulfonamide drugs, it has been possible to reduce greatly the incidence of urolithiasis by control of (1) the amount and (2) the hydrogen ion concentration of the urine, and (3) the concentration of the drug in the blood. However, other factors are also important. An established renal or hepatic dysfunction may predispose to sulfonamide urolith formation, and these conditions should be considered in conjunction with the administration of the sulfonamide drugs. In the matter of dosage, therapeutically effective but toxicologically safe blood concentrations should be maintained throughout the course of therapy. (Am. J. M. Sc., May '46 - J. V. Scudi)

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Penicillin and Sulfadiazine in the Treatment of Putrid Lung Abscess: Many patients with acute putrid lung abscesses in private practice and in hospitals are observed for protracted periods of time in the hope that they will recover under medical treatment. During this period serious and often fatal complications frequently arise, such as septic embolism, progression of the abscess with the formation of multiple abscesses, fibrosis, atelectasis and bronchiectasis in the lung involved, extension into the opposite lung, and rupture into the pleura with putrid empyema. Moreover, while patients are under observations, their acute abscesses become chronic abscesses and then they rarely if ever recover spontaneously. Most distressing is the fact that patients with chronic abscesses are not cured with simple pneumonotomy, and the mortality rate is high, even with the best surgery, because of many grave complications.

There was, therefore, a great need for a method of treatment which would (1) increase the rate of recovery without surgical interference, (2) decrease the number and severity of preoperative and postoperative complications, and (3) make operative treatment generally safer and more effective.

When penicillin became freely available during the past year, the authors administered it to 13 patients with putrid lung abscess in order to explore its potentialities. Sulfadiazine was employed concurrently despite the fact that, when used by itself, it had no appreciable effect on a small series of patients so treated. It was hoped, however, that it might have a beneficial effect on the perifocal pneumonitis.

As soon as the diagnosis of putrid lung abscess was definitely established and confirmed by roentgenograms, the patient was given both sulfadiazine and penicillin. The sodium salt of penicillin was administered intramuscularly in doses of 25,000 units every three hours. The sulfadiazine was given in the usual manner, sufficient to establish and maintain adequate blood levels.

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Of the 13 cases in this series, six consecutive patients with acute putrid lung abscess were treated with penicillin and sulfadiazine. All became free from local and constitutional symptoms. They improved remarkably in weight and strength. In five there was complete recovery from the disease as judged from the chest roentgenograms. In one a previously noted encapsulated exudate remained symptom-free and unchanged. One patient, almost moribund with multiple bilateral abscesses and widespread bilateral pneumonia, made a remarkable recovery and was left with only slight asymptomatic bronchiectasis. Four of these six patients were admitted with large abscesses and grave toxic symptoms and formerly would have fallen into the group requiring immediate surgical care. One would probably not have survived operative interference. With penicillin and sulfadiazine treatment they made a complete recovery without operation. There were no complicating local or metastatic infections.

Seven of the 13 patients treated had chronic putrid lung abscesses. One of these had formerly been operated on. He came into the hospital with convulsions and died the same day of a ruptured brain abscess. One had a large putrid right upper lobe abscess with a spillover to the lower lobe of about six months' duration. Another had had a large putrid abscess in the left lower lobe for about three months. The fourth developed a putrid lung abscess in the right lower lobe following operation for ruptured gastric ulcer a year prior to admission to the hospital where a spillover to the left side was noted. The fifth patient was seen about six months after she developed an abscess in the right lung following a right "pneumonic" process. The sixth patient had several large foul lung abscesses in the right lower lobe for six months prior to admission to the wards, and the seventh had a large foul abscess in the right upper lobe for at least eight months before he came under observation by the authors. In five of these seven chronic cases, the treatment with penicillin and sulfadiazine was followed by unmistakable improvement. There was remarkable amelioration of the toxic manifestations. Serial chest roentgenograms disclosed definite regression of the lesion in two and marked improvement in one. There were no septic or metastatic complications while under treatment, and it is considered that all of them became better surgical risks after penicillin-sulfadiazine treatment than they were before the treatment was instituted. One patient died of ruptured lung abscess one month after the treatment with penicillin was discontinued.

In the past few decades there have been many reports of cures in isolated cases of acute putrid lung abscess with various chemicals, vaccines, and bacteriophage. Even artificial pneumothorax, obviously contraindicated in the treatment of such cases, came in for praise by some observers. The fact that these reported isolated successes have not been reproduced with the respective methods of care in any fair group of patients with lung abscess suggests that the patients reported upon might have recovered spontaneously without treatment.

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In the past year Roberts, Dawson and Hobby, Snook, and Smyth and Billingslea reported isolated cases of acute putrid abscess that recovered completely with penicillin therapy. The complete recovery of five of the six patients with such abscesses reported upon here under the combined penicillin and sulfadiazine administration prompts the suggestion that this method of treatment deserves serious consideration and further extended trial, particularly since four of the patients belonged to a group heretofore considered in need of immediate surgical interference and one of them would probably not have survived operation.

In the case of chronic lung abscess, however, the lung and bronchi are converted by the reaction to the putrid infection into a maze of fibrosis, multiple hard walled abscesses, bronchiectasis, atelectasis, and chronic pneumonitis, so that restitution to the normal cannot be hoped for with medical care or even with extensive surgery. At times nothing short of lobectomy or pneumonectomy will save the life of the patient. Nevertheless the combined penicillin and sulfadiazine treatment in such cases is of inestimable value. It lessens toxicity, prevents further metastatic septic foci, clears the surrounding pneumonitis, and improves the general condition of the patient so that he can better withstand the extensive operation indicated to bring relief.

It is important to bear in mind the need of continuing this combined penicillin-sulfadiazine administration in acute putrid lung abscess not only until all toxic and local symptoms have disappeared but until the chest film shows no abnormal shadows in the segment of the lung involved. In chronic putrid abscess this method of care should be started preparatory to surgical intervention and continued after operation until all toxic symptoms disappear. (Ann. Int. Med., July '46 - Stivelman and Kavee)

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Treatment of Condylomata Acuminata with Podophyllin: In 1942 Kaplan introduced a simple, effective method of treatment for condylomata acuminata or genital verrucae. It consists of the topical application of podophyllin.

The authors have treated 50 patients by a slight modification of Kaplan's method and have achieved rapid and spectacular clinical cures in 48, or 96 per cent, of the patients. Directions on how to employ the method follow:

> Prepare a 25 per cent suspension of podophyllin in mineral oil, and shake it well before use. Then, with a wooden, cotton-tipped applicator, apply sufficient material to cover the verrucae. While a certain amount of the suspension may spill on the adjacent normal tissue, it is possible to minimize such contact by wiping away the excess with a dry, clean applicator after the verrucae have been

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thoroughly covered. The material should remain in contact for eight hours. Prolonged contact for twenty-four hours is likely to produce irritation; therefore, the patient should be instructed to wash the treated area thoroughly about twelve hours after the application. In the majority of cases one application is sufficient, although occasionally second and third applications are necessary

Within a few hours after treatment, signs of involution of the growths are manifested by pallor, loss of moisture, and shrinking. In from twenty-four to forty-eight hours, large as well as small verrucous masses decrease rapidly and within from three to six days disappear with little or no residual scarring. Slight irritation of the adjacent tissue may be detected in most cases, but this rapidly subsides. Balanitis and phimosis occur in some patients, particularly those with long, tight foreskins. The frequency of these complications depends upon the amount of podophyllin which comes into contact with the glans penis and foreskin, and also probably on individual sensitivity to the drug. The balanitis and phimosis subside in a few days if the affected parts are irrigated daily with a mixture of equal parts of distilled water and 3 per cent hydrogen peroxide. It is not necessary to perform a dorsal slit or circumcision except in extreme cases. Patients should be cautioned to avoid transferring by the fingers any of the podophyllin mixture to the eyes.

The mode of action of podophyllin is being investigated at the William Beaumont General Hospital, and the results of detailed clinical and laboratory studies will be published elsewhere. Nothing to contraindicate the use of podophyllin as a topical remedy for genital verrucae has been disclosed thus far. It is recommended that the treatment of condylomata acuminata with podophyllin supersede former methods of treatment. (Bull. U. S. Army M. Dept., Aug. '46 - Sullivan and King)

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Use of Diisopropyl Fluorophosphate ("DFP") in the Treatment of Glaucoma: In the past decade several new drugs, namely, mecholyl, neostigmine, carbaminoylcholine chloride, and furfuryl trimethyl ammonium iodide (Furmethide), have been introduced as therapeutic agents for glaucoma. Of these drugs, neostigmine is the only anticholinesterase agent. None of these drugs has proved to be the ideal in the treatment of all forms of glaucoma, but each has a definite place and value in the therapy of this condition. Diisopropyl fluorophosphate ("DFP"), an anticholinesterase agent with a much more prolonged action than either neostigmine or physostigmine, also does not fulfill all the requirements of an ideal miotic antiglaucomatous agent, but it has certain attributes which entitle it to serious consideration.

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Because of the prolonged effect of very dilute preparations of DFP when locally applied to the normal eye, it seemed advisable to test the efficacy of this agent in glaucomatous eyes. Its lack of irritant properties had already been demonstrated in rabbits; after application of a single lethal or repeated sublethal doses of DFP to the eyes there were no signs of clinically or histologically demonstrable damage to the eyes, and even direct injections into the anterior chamber of 0.1 c.c. of 0.1 per cent solution of DFP produced no permanent ocular damage.

Fifty-two patients with glaucoma in one or both eyes, and representing a total of 78 glaucomatous eyes, were treated with DFP during a period of six months. Whenever possible, intraocular tensions were measured throughout a preliminary twenty-four hour period during which the patient received no miotic therapy. With almost all patients other miotic agents had been tried before DFP was used. All patients treated with DFP were admitted to the hospital for at least seventy-two hours so that intraocular tensions could be watched throughout the entire period.

Of the 48 eyes with chronic simple glaucoma, pilocarpine and/or physostigmine was successful in controlling intraocular tension in only 43.7 per cent. Of the same eyes, DFP was successful in keeping the tension below 30 mm. of mercury in 89.5 per cent. Of eyes in which glaucoma developed after cataract extraction, pilocarpine and/or physostigmine was successful in lowering intraocular tension to below 30 mm. of mercury in only 40 per cent, whereas DFP was successful in 100 per cent.

In 6 cases of glaucoma secondary to uveitis, intraocular pressure was not controlled in 5 patients who were treated first with pilocarpine and/or physostigmine, whereas it was controlled in 5 and not controlled in 1 when the 6 patients were treated with DFP. Although of interest, great significance cannot be attached to the results in this small series, for the great variability in the tension curve of eyes with glaucoma secondary to uveitis has been noted by Kronfeld, and in the patients reported upon here it is possible that DFP therapy was started in a relatively favorable interval.

Experience with DFP has not been great enough to allow stipulation of the exact method of administration in each case of glaucoma. However, the drug should not be ordered to be used empirically three times or even once a day. The frequency of application can be determined only by repeated checks of the intraocular tension throughout the first twenty-four hours and daily thereafter. Administration may be required only once daily, or even once weekly. The visual fields must be closely observed.

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Of interest is the fact that although 0.05 per cent DFP or weaker solutions in water or oil produced miosis which lasted from one to two weeks on the average in normal human eyes, the duration of the miosis in glaucomatous eyes was much less than this. The longest miotic effect in any glaucomatous eye was for twelve days in patient 6 (right eye), and the shortest was for twelve hours in patient 2 (left eye). These observations suggest that there may be some fundamental derangement in the acetylcholine-cholinesterase system in glaucoma.

Six months may be an insufficient period in which to evaluate this therapy, and the value of DFP in long-term therapy is still to be determined. However, its proficiency in reducing intraocular tension over a period of months appears to be established by these data.

Although it is true that this agent does have certain disadvantages (the production of visual blurring, brow ache and eye ache, spasm of accommodation and pericorneal injection) that preclude its universal use in antiglaucoma therapy, there are patients in whom these side effects are not troublesome and also those in whom, in spite of these undesirable effects, DFP may prove to be of considerable value. Some of these uses are suggested: 1. DFP produces little discomfort in patients with glaucomatous, aphakic eyes, and it appears to be a most effective agent in controlling the tension in such eyes. 2. DFP is able to overcome the pupillary and accommodative effects of atropine and should prove of therapeutic value in preglaucomatous and glaucomatous eyes unfortunately and inadvertently treated with atropine. 3. DFP may be helpful in controlling the tension in eyes in which operation must be postponed and pilocarpine or physostigmine has proved ineffective. 4. DFP may properly be used initially in relief of acute congestive glaucoma, since it is a more powerful agent than physostigmine. In other words, this anticholinesterase agent can be used in eyes in which physostigmine formerly was employed.

A slight depressant effect on serum cholinesterase could be detected from ocular instillations of DFP in a few cases, but no systemic symptoms were elicited by ocular administration in any of the 52 patients treated.

Occasionally normal human eyes show a rise in intraocular tension with DFP, but the majority display a subnormal tension for several days after one local application of very dilute preparations of DFP. Physostigmine and neostigmine are also capable of producing elevated intraocular pressure in some normal eyes of animals and human subjects.

NOTE: Among the eyes treated with DFP after this paper was submitted there were two that showed a rise in intraocular tension after the instillation of DFP. One of these eyes had chronic simple glaucoma and the other

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congenital glaucoma. The tension in the congenitally glaucomatous eye fell spontaneously after the initial rise following the use of DFP. In the eye with chronic simple glaucoma an iridectomy ab externo had to be performed to bring the tension back to its former level. These observations must be kept in mind in starting DFP therapy with any patient. (Arch. Ophth., July '46 - Leopold and Comroe)

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Arteriographic Visualization of Cerebrovascular Lesions: Cerebral angiography using thorium dioxide for the contrast medium is an important addition to the armamentarium of the neurologist. Intracranial aneurysms, angiomatous malformations of the brain, occlusions of the internal carotid artery, and traumatic arteriovenous aneurysms can be accurately localized. If full benefit is to be derived from this technic, accurate knowledge of the clinical course of symptoms which these lesions produce is essential. Careful evaluation of the history and clinical picture will almost always suggest the presence of the lesion shown in the angiogram.

There are, however, several differential points which are associated with these cerebrovascular lesions. Alternating syndromes involving the second, third, fifth, and sixth cranial nerves with contralateral pyramidal signs are common. Transient seizures of varied types are frequent. Increased intracranial pressure is generally absent. Unilateral sensitivity of the carotid sinus may be suggestive. Puzzling neurologic pictures in cases in which air studies are not conclusive may at times be clarified by cerebral angiography. Finally, in cases of spontaneous subarachnoid hemorrhage the use of the technic should be seriously considered. (Arch. Neurol. and Psychiat., June '46 - Govons and Grant)

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Poliomyelitis Epidemics Not Usually Fly Borne: A great deal of interest has been aroused in many quarters regarding the control of poliomyelitis by airplane application of DDT. It was hoped that this method of eliminating adult flies as vectors might quickly check epidemics of poliomyelitis.

Although feces have been shown to be one of the main mediums of exit of the virus of poliomyelitis from the human body, and flies have been shown to be capable of carrying the virus at least mechanically after being in contact with infected feces, there is sufficient evidence to indicate that feces-flies-food-mouth is not the usual method of spread of an epidemic. In a review of recent studies on poliomyelitis epidemics, in the Journal of the American

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Medical Association for January 19, 1946, it is stated that evidence was produced establishing at least 80 per cent patient-to-patient contact when "illnesses with characteristics compatible with poliomyelitis were included." Multiple cases in the family were the rule, rather than the exception, and the Chicago study found poliomyelitis contagious to the degree of 90 per cent in the 1-1/2- to 3-1/2-year age group. Paralysis developed in about one in six of the cases studied. The article concludes, "although general environmental factors in the transmission of poliomyelitis cannot be entirely disregarded, these recent studies tend to stress the direct person-to-person transfer as the most likely mode of spreading the disease."

The virus is also known to have been spread through unpasteurized milk, and is known to be present in the feces of perfectly healthy contacts of cases. On theoretical grounds, the prevalence of flies does provide an additional opportunity for the transmission of poliomyelitis in a community where open privies or open sewers exist. Every effort should be made to reduce the fly population, and particularly, to exclude them from all possible contact with human feces.

The application of DDT by airplane is not likely to eliminate the contact of flies with feces in a poliomyelitis epidemic. The application of DDT from planes in dosages considered safe for beneficial forms of life, (from 0.2 to 0.3 lb. per acre) has resulted in nearly 100 per cent direct-contact kill of adult flies on the wing only. Larvae (in feces) and pupae (underground) are, of course, untouched and continue emerging unchecked. Flies inside buildings will usually escape a fatal contact. Flies also are capable of infiltrating several miles a day from adjoining unsprayed areas. The residual effect of a single airplane application of DDT, if within the safe dosage, is considered negligible. When observations were made under conditions where fly-breeding was not controlled, fly populations rose steadily after the first day, necessitating spraying at least every 3 days for a semblance of control.

Airplane spray operations for the control of poliomyelitis to date have had no demonstrable effect on the course of an epidemic. The incidence in one large southern city dropped 50 per cent during the week immediately following the airplane spraying of certain areas of that city, and remained constant during the second and third week after spraying. Since the incubation period of poliomyelitis is from 7 to 14 days, and the maximum fly reduction is found only on the day of spraying, the greatest drop in incidence of poliomyelitis should have been felt around the end of the second week. There was no change in the gross incidence at that time.

The airplane application of DDT for fly control is costly, not without some risk, and the results are very evanescent. Its use in the control of poliomyelitis is

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still more difficult to justify because of the remote possibility that the fly is the major vector involved in any epidemic of poliomyelitis. The use of airplane application of DDT in poliomyelitis outbreaks will, therefore, be regarded as little more than a gesture except where it is set up as an experiment under conditions which allow for interpretation of results. (Preventive Medicine Div., BuMed)

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Report on Supervoltage Irradiation: During an eight-year period, 1937 to 1945, supervoltage radiation (1200 kv.) was used on a total of 1,835 patients with tumors, for the most part malignant, of various kinds and in various locations. The results of this treatment were reviewed and analyzed as separate groups where the numbers were large enough to make this justifiable, and were compared with published results, when available, in similar groups treated with 200 kv. radiation and/or other methods, as well as untreated groups.

As was to be expected, it was found that deep-seated, localized lesions, which in the past have shown some response to high voltage irradiation, improved more with supervoltage irradiation, in that the lives of the patients concerned were prolonged and made more comfortable. There is very little evidence to show, however, that a greater number of these tumors can be destroyed by this method of treatment than is possible with other methods. It had been hoped that with irradiation by supervoltage it would be possible to destroy glandular metastases in cases in which the primary lesion had already been destroyed either by irradiation or surgery. This has not been accomplished. In selected cases, in which the tumors are proved to be radiosensitive, better results may be possible. Unfortunately, radiosensitive tumors are also rapidly growing ones; they metastasize early to distant organs, and only a few of the patients so affected survive for any length of time.

Perhaps the most important advantage of supervoltage irradiation is that there is less likelihood of serious skin damage when it is used than when lower voltage irradiation is used. It has been shown repeatedly that when supervoltage irradiation is properly applied, it is possible to produce severe damage to deep-seated organs without permanent injury to the overlying skin. The total dose is no longer dependent upon skin tolerance but upon the reaction of the deep-seated organs in the path of the rays. In those cases where arrest of the disease is impossible and life expectancy is a matter of months, protection of the skin is of minor importance, but where there is a chance of cure, or where life may be considerably prolonged, the avoidance of permanent skin damage must be given a place of some importance in the plan of treatment.

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The material presented in the report seems to show that when the cases are properly selected, supervoltage irradiation offers the patient a slight but definite increase in life expectancy and that some of the unavoidable bad effects of irradiation with lower voltage can be eliminated. The life expectancy curves in the various groups show that there is considerable variation during the first twenty-four months, but that after twenty-four months the curves run more or less parallel. This is to be expected in patients with incurable disease in the age groups under discussion. The early part of the curve is influenced by the rate of progress of the disease, while the later part of the curve follows closely that of the normal life expectancy for the given age group. From the data available, it was impossible to determine the true cause of death in many cases, or to estimate the relative importance of the primary tumor and distant metastases in the final stages of the disease.

More information is necessary before final conclusions can be drawn but, in the opinion of the authors, the use of supervoltage irradiation should be encouraged in selected cases of carcinoma of the cervix, carcinoma of the bladder, carcinoma of the lung, embryoma of the testicle, carcinoma of the tonsil, localized lymphoma, Ewing's tumor, and carcinoma of the rectum. (Am. J. Roentgenol., May '46 - Holmes and Schulz)

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Surgery of the Aorta: Astley Cooper, in 1817, after much careful thought and animal experimentation first performed ligation of the aorta. Although his patient died after two days, up to 1944 the operation had been successfully performed on at least two occasions.

In 1944 Crafoord of Stockholm successfully performed resection of the strictured aorta with restoration of continuity by direct end-to-end anastomosis for the relief of congenital coarctation. Crafoord had already demonstrated in dogs that, provided the blood supply to the brain was maintained (by anastomosis between the carotid and jugular vessels of another dog), the flow of blood to the other organs could remain suspended for as long as 25 minutes without signs of organic damage. On the strength of this, when operating for patent ductus arteriosus, he applied clamps so as to enable him to divide the duct and suture the aorta. In one patient the aorta was shut for 27 minutes, and no ill effect was noticed. In congenital coarctation a free collateral circulation already exists. Crafoord considered, therefore, that in such cases he might keep the aorta closed with safety for a much longer time while resecting the strictured portion. In 1944 two suitable patients, a boy of 12 and a man of 27, were considered for operation. He performed a thoracotomy on them to examine the feasibility of resection. In both cases, he found it possible to mobilize the aorta,

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resect the stricture, and approximate two ends of equal size without tension so as to allow end-to-end anastomosis. Both patients made a good recovery with the blood pressure in the upper and lower limbs returning to normal after the operation. Return of the blood pressure in the upper and lower limbs to normal is important because the main reason for correcting the aortic stricture is to relieve the hypertension in the head and upper limbs which is the chief cause of death. Crafoord has performed this operation nine times with only one death.

The abnormality of aortic stricture is fairly common. Maud Abbott, in her classical work on congenital heart disease, found 142 instances in 1,000 cases of congenital cardiovascular defects. The average age at death in her series was 32 years, with extremes of 3 and 92 years. Although it is true that occasional patients are seen who are in late adult life, it is generally accepted that most patients die young. If hypertension is detected in a young adult, aortic coarctation must be considered. Through early recognition of the existence of the condition, the possibility of surgical relief may be made available to more of these patients. (Brit. M. J., Aug. 3, '46)

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(Not Restricted)

Mechanism of Infectiveness of Ringworm of Scalp and Spontaneous Cure in Puberty: Since 1943 ringworm of the scalp hair caused by the fungus, Microsporon audouini has been endemic among school children in numerous large cities of the United States. It has been known for more than 50 years that although this infection is distressingly persistent during early childhood, it clears up spontaneously with oncoming adolescence. The scalp hair of adults is immune throughout life. For therapeutic purposes sex hormones have been administered to children with this disease in order to simulate pubertal conditions, but practicable dosages have not been effective. From the therapeutic point of view it seemed, therefore, more promising to investigate the local changes on the scalp following puberty and to find out what makes the scalps of adults nonsusceptible to M. audouini infections.

From this study it was learned that with the onset of puberty, the sebaceous glands of the scalp start to secrete a sebum which contains, in higher concentration than before, low-boiling saturated fatty acids with selective fungistatic and fungicidal action on M. audouini. Highly active normal aliphatic monobasic acids having odd numbers of carbon atoms, including pelargonic acid, have been isolated from hair fat of adults. The "adult type" of hair fat does not kill the fungus spores within the hair but prevents infection of the new hair following the old infected hair in the process of shedding. (Science, Aug. 30, '46 - Rothman et al.)

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(Not Restricted)

Reports on Research Projects:

X-519
(Av-273-p)
Final Rep.
15 Mar '46

A Brief Experiment on the Legibility of the TDC under Several Conditions of Illumination and Adaptation.

Two measures of efficiency in reading the dials of the TDC (Torpedo Data Computer) were obtained on six subjects under several conditions of preadaptation and of conning tower illumination. In both measures of efficiency, changes associated with the preadaptation conditions were observable. Subjects who had been previously adapted in red illumination for 15 minutes read the TDC dial more quickly and with fewer errors than when they were not preadapted. (Med. Res. Dept., U. S. SubBase, New London, Conn. - Verplanck)

(Not Restricted)

X-519
(Av-273-p)
Interval Rep. 1
15 Mar '46

An Investigation of the Red Illumination of the Submarine Conning Tower.

Experiments were designed and carried out to provide a practical evaluation of the red illumination of the conning tower of a submarine. The visual performance simulated that of an officer at the periscope, and the illumination conditions, which determined the state of dark adaptation of the subjects employed, included: (a) complete absence of illumination in the conning tower; (b) full illumination from all night lights in a conning tower painted black; and (c) full illumination from all night lights in a conning tower painted flat white.

The results clearly indicate that, without respect to the interior paint finish, the red light provided in the conning tower by two 50-watt red steam-tight fixtures, although sufficient to permit casual reading and chartwork, is not sufficient to impair to any measurable extent practical night visual performance of personnel working in such a space. (Med. Res. Dept., U. S. SubBase, New London, Conn. - Verplanck)

(Not Restricted)

X-284
Report No. 11
26 Apr '46

Physical Factors in the Pathogenesis of Aeroembolism - A Review.

The physical factors relating to the problems of gas

(Not Restricted)

Reports on Research Projects (Cont.):

X-284 (Cont.)

bubble formation in animals and man are reviewed and discussed under several headings which comprise the mathematical principles underlying bubble formation and gas uptake and elimination, the growth of gas nuclei in the body, decompression rate, gas solubilities, body composition, tissue blood flow, and capillary density and surface. Previous reports on the experimental production of bubbles in animals under different conditions are related to these principles. Decompression from high pressures and to altitude are compared. While the same phenomena are considered to be basic to both types of decompression, certain differences, and their possible explanation are discussed. (Nav. Med. Res. Inst., NNMC, Bethesda, Md. - Catchpole and Gersh)

(Not Restricted)

X-471 (Av-249-p) 22 May '46

Comparative Study of Devices for Testing Vision.

The object of this study was to compare several devices designed for testing vision.

A group of 203 subjects was tested on two commercial vision testing devices and a battery of Navy tests. Measurements of visual acuity and heterophoria were obtained. The results were analyzed in terms of the reliability of the several testing units, and comparisons of these reliabilities were made.

For visual acuity, the Bausch and Lomb Ortho-Rater test showed the highest reliability, the American Optical Company Sight Screener test the lowest reliability. The Snellen and Grow tests gave intermediate reliabilities. For measurements of heterophoria, the clinical test was slightly more reliable than the Ortho-Rater test. (Med. Field Res. Lab., Camp Lejeune, N. C. - Mueller and Richmond)

Note: Those interested in seeing copies of the complete reports should address their request to the Research Division, BuMed.

Opinions or conclusions contained in these reports are those of the authors. They are not to be construed as necessarily reflecting the views or the endorsement of the Navy Department. Reference may be made to these reports in the same way as to published articles noting authors, title, source, date, project number, and report number.

(Not Restricted)

Opportunities for Full-Time and Part-Time Active Duty for Reserve Medical and Dental Officers: The attention of Reserve medical and dental officers is invited to the opportunity to perform full-time active duty at one of the 15 major naval air stations of the Naval Air Reserve Training Command listed below:

NAS Dallas, Tex.
NAS New York, N.Y.
NAS Minneapolis, Minn.
NAS Grosse Ile, Mich.
NAS Atlanta, Ga.
NAS Glenview, Ill.
NAS Columbus, Ohio
NAS Olathe, Kan.
NAS Memphis, Tenn.
NAS St. Louis, Mo.
NAS Livermore, Cal.
NAS Los Alamitos, Cal.
NAS Willow Grove, Pa.
NAS Squantum, Mass.
NAS New Orleans, La.

Additional Reserve medical officers are needed as Flight Surgeons for the various units which comprise the Organized and Volunteer Reserve components of the Inactive Reserve.

Reserve officers of the Medical and Dental Corps who are interested in full-time active duty as member of the stationkeeper staff at one of the 15 major Naval Air Stations listed above should initiate letters to the Bureau of Naval Personnel, via the Chief of Naval Air Reserve Training with headquarters at Naval Air Station, Glenview, Ill., and via BuMed, listing the stations (in order of preference) at which duty is desired. Personnel are desired in the ranks of Commander and Lieutenant Commander in the Medical Corps, and of the rank of Lieutenant in the Dental Corps. Quotas are not restricted to these ranks, however, and interested officers of any rank may apply.

Reserve officers of the Medical Corps (preferably flight surgeons) who are desirous of affiliating themselves with either the Organized or Volunteer components of the Inactive Reserve for part-time active duty with the units operating at one of the 15 Naval Air Stations above should contact directly the Commanding Officer of the station at which the units are based. Naval Air Reserve Training Units are also based at the Naval Air Stations listed below:

NAS Anacostia, D.C.
NAS Norfolk, Va.
NAS Jacksonville, Fla.
NAS San Diego, Calif.
NAS Seattle, Wash.
NAS Miami, Fla.

In the case of these latter stations, interested personnel are advised to contact the Commanding Officer of the Naval Air Reserve Training Unit (NARTU), directly, rather than the Commanding Officer of the station.

(Not Restricted)

Notice for Transferees re Benefits and Time Limit for Appointment Acceptance: See copy of Alnav 468 on page 28 of this issue.

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(Not Restricted)

Bumed News Letter to HC Officers Not on Active Duty: The Surgeon General has approved a recommendation that the Bumed News Letter also be sent to certain officers of the Medical Department with the designation HC who are retired or in an inactive duty status. It is considered that the News Letter will assist in keeping these officers informed of matters of general and specific interest and usefulness.

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(Not Restricted)

Course in Submarine and Diving Medicine: See Alnav 474 on page 28 of this issue.

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(Not Restricted)

Re Aviation Medicine Research Reports: By existing agreements between the Bureau of Medicine and Surgery and the other activities concerned, members of the U. S. Navy Medical Department who in the future desire aviation medicine research reports originating in the U.S. Army, the Committee on Aviation Medicine of the National Research Council, and various civilian laboratories should submit their letters of request to the Bureau. This arrangement is necessary in order to insure the optimal distribution of the limited number of reports available. (Research Div., BuMed)

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(Not Restricted)

Reorganization of Dental Functions and Establishment of a Dental Division, Bureau of Medicine and Surgery: The following letter and chart give the new setup of the Dental Division:

20 Aug 1946 (Not Restricted)

To: Assistant Chiefs of Bureau, Divisions, and Officers, BuMed.

Subj: Reorganization of Dental Functions and Establishment of a Dental Division, Bureau of Medicine and Surgery.

(Not Restricted)

Refs: (a) BuMed Top Management Memo. A3-4/EN, 7 June 1946
(b) BuMed Memo. A3-4/EN, 24 May 1945, Reorganization of Dental Functions under an Assistant for Dentistry.

General

1. The Dental functions of the Bureau of Medicine and Surgery as outlined herein and reflected in the attached chart are approved and shall become effective immediately and all matters relating to dentistry, as hereinafter prescribed, shall be referred to the Dental Division.

2. An office of the Chief of Dental Division is hereby established under the policy control of the Assistant Chief of Bureau for Dentistry. An officer of the Dental Corps of the Navy will be detailed as the Chief of this Division.

3. The Dental Division shall (a) establish professional standards and policies for dental practice; (b) conduct inspections and surveys for maintenance, efficiency and economy of such standards; (c) initiate and recommend action pertaining to complements, appointments, advancements, training, assignment, and transfer of dental personnel; and (d) serve as the advisory agency for the Bureau of Medicine and Surgery on all matters relating directly to dentistry.

4. In order to expedite these functions, there is established under the Assistant Chief of Bureau for Dentistry, an Office of the Chief of Dental Division consisting of (a) a Dental Professional Branch, (b) a Dental Inspection Branch, and (c) a Dental Personnel Branch.

Assistant Chief of Bureau for Dentistry

5. The Assistant Chief of Bureau for Dentistry shall be responsible for the functions outlined in paragraph 3(e) and 5, reference (a).

Chief of Dental Division

6. The Chief of Dental Division shall be responsible for the performance of all dental functions outlined in paragraph 3 of this directive, but shall adopt no major policies, methods, or procedures without the approval of the Assistant Chief of Bureau for Dentistry.

Dental Professional Branch

7. The Dental Professional Branch shall perform the functions listed in items (a) and (d) as relates to professional standards and policies, and shall be responsible for the development, coordination, and evaluation of training programs

(Not Restricted)

for dental personnel listed in item (c) of paragraph 3 of this directive. This branch shall consist of (a) the Dental Standards Section and (b) the Dental Training Section.

8. The Dental Standards Section shall perform the functions of the Dental Professional Branch as they relate to professional standards and policies for dental practice.

9. The Dental Training Section shall perform the functions of the Dental professional Branch as they relate to the development, coordination, and evaluation of training programs for dental personnel.

Dental Inspections Branch

10. The Dental Inspections Branch shall perform the functions listed in item (b), paragraph 3 of this directive. This branch shall function under the General Inspector for Dentistry, who is directly under the Chief of the Dental Division.

Dental Personnel Branch

11. The Dental Personnel Branch shall perform the functions listed in item (c) except for the development, coordination and evaluation of training programs, and item (d) as relates to officer and enlisted personnel matters, of paragraph 3 of this directive. This Branch shall consist of (a) a Dental Appointment and Advancement Section, (b) a Dental Assignment and Transfer Section, and (c) an Enlisted Personnel Section.

12. The Dental Appointment and Advancement Section shall perform the functions of the Dental Personnel Branch as they relate to professional qualifications of dental officer personnel.

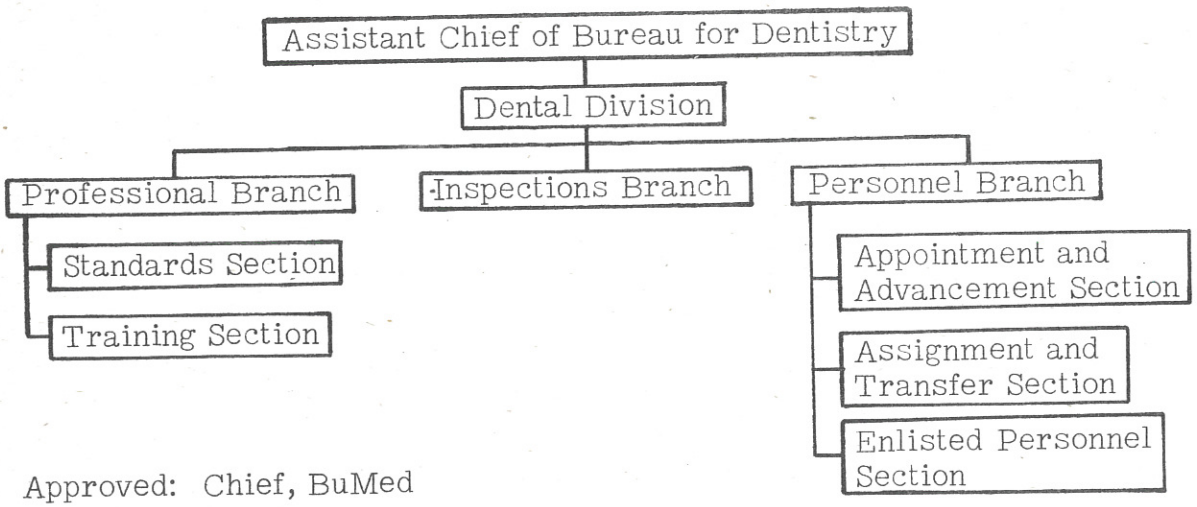
13. The Dental Assignment and Transfer Section shall perform the functions of the Dental Personnel Branch as they relate to complements, assignments, transfers and releases of dental officer personnel.

14. The Enlisted Personnel Section shall perform the functions of the Dental Personnel Branch as they relate to enlisted personnel.

15. Reference (b) is hereby superseded and cancelled.

/s/ Ross T. McIntire
Vice Admiral, (MC), USN
Chief of Bureau

(Not Restricted)



Approved: Chief, BuMed

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(Not Restricted)

New Dental Formulary: The completion of a formulary for dentists will be of interest to the dental officers of the Navy. This Dental Formulary has resulted from the cooperation of the New Jersey Dental Society and the Professional Relations Committee of the New Jersey Pharmaceutical Association. It will be divided into three sections: (1) information needed by dentists for prescription writing, (2) prescriptions for patients, and (3) formulas for dental office use. The Formulary will probably be ready for publication early this fall. (Dental Div., BuMed)

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(Not Restricted)

Re the Procedure and Disposition of the Reports in the Physical Examination of Candidates for the Naval Academy: It would appear from the rather frequent communications received by the Bureau of Medicine and Surgery from Members of Congress, civilians, and service personnel that medical officers may not be entirely familiar with the procedure to be followed in the examination of Candidates in and out of the Service for the Naval Academy and with the disposition of the reports of physical examinations, NavMed Y's.

The new Manual of the Medical Department covers this subject in Paragraph 2115. The sub-paragraph 2115.6 concerning enlisted men of the Naval Reserve further refers to Part H-1904, Bureau of Naval Personnel Manual.
(PQ & MR Div., BuMed)

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(Not Restricted)

New Film Available - MN-6519 - What Price Iwo (Sound - color - 20 minutes): This film for all hands shows the invasion of Iwo Jima and the work of a typical medical battalion during the operation. The 5th Medical Battalion is used as the example. It shows how the wounded were given first aid and evacuated from the battle areas to hospitals and ships. It demonstrates the importance of preventive medicine during the Iwo Operations.

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(Not Restricted)

Re Specialty Training for Medical Officers: It was pointed out in the Bumed News Letter of 24 May 1946 that many medical officers request graduate training in several different specialties within a period of from 12 to 18 months. A review of these requests leaves the Advisory Board in a quandary as to the true desires of medical officers making such requests. For example, it has been noted that a medical officer may request obstetrics and gynecology, aviation medicine, general surgery, and internal medicine. When a medical officer shows such inconstancy, it is obvious that he has not given proper consideration to the choosing of his specialty. His sincerity in making such requests, however, is not questioned.

It is the policy of the Bureau of Medicine and Surgery and the American Specialty Boards to encourage any doctor to choose a specialty and then pursue that specialty rather than to attempt to receive training in several specialties.

In reviewing requests for training, it is noted that there are more requests for certain specialties than for other specialties. The Bureau invites requests for the following specialties (both for residency-type training and courses in civilian institutions): allergy, anesthesiology, dermatology, neurology, ophthalmology, otolaryngology, and pathology. (Professional Div., BuMed)

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(Not Restricted)

Number of Standard Dental Excavating Burs Raised: The standard number of dental excavating burs has been increased to forty-seven effective September 1, 1946, the U. S. Department of Commerce has announced.

The increase was authorized in a revision of Simplified Practice Recommendation R195-42, a wartime limitation, which reduced the number of standard excavating burs from 75 to 18.

Of the forty-seven types of burs now approved, 12 are for shapes not in the previous issue of the SPR R195-42. The other added burs are used principally

(Not Restricted)

in dental colleges, or were in sufficient regular demand before the wartime emergency to become recommended items. (J. Am. Dent. A., Sept. 1, '46)

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(Not Restricted)

Public Health Foreign Reports:

Disease	Location	Date	No. of Cases
Cholera	Burma	July 6-13, '46	264
	China		
	Chekiang Prov.	June 1-30, '46	96 (9 fatal)
	Hupeh Prov.	June 11-20, '46	39 (21 fatal)
	Kiangsu Prov.	June 21-30, '46	245 (60 fatal)
	Kwangsi Prov., Wuchow	May 21-31, '46	214 (68 fatal)
	Kwangtung Prov.	June 21-30, '46	276 (85 fatal)
	Nanking	June 21-30, '46	3
	Shanghai	July 1-20, '46	1,597 (118 fatal)
	Malay States, Kelantan	July 13-20, '46	56 (42 fatal)
	Manchuria, Liaoning Prov., Chinsi	July 1-2, '46	12 (12 fatal)
Plague	China, Chekiang Prov., Wenchow	June 11-20, '46	22 (2 fatal)
	Fukien Prov.	June 1-30, '46	425 (191 fatal)
	Foochow	June 11-20, '46	232 (66 fatal)
	Futsing	June 1-10, '46	48 (27 fatal)
Typhus Fever	Guatemala	May '46	77 (11 fatal)
	Morocco (French)	July 11-20, '46	55

(Pub. Health Reps., Aug. 16 and 23, '46)

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Circular Letter 46-126 26 August 1946 (Not Restricted)

To: All Ships and Stations

Subj: Multiple Dental Operating Rooms, use of

1. The Navy is faced with an increasingly difficult dental problem. This is due to several factors, among them the loss of a great number of reserve dental officers from the Navy, together with the inability to replace them, the pending loss of additional dental officers of the regular establishment at such time as resignations from the Service are acceptable, and the greatly lowered dental requirement for enlistment in the Navy and in the Marine Corps. This lowered dental requirement has been necessary in order that the Navy and Marine Corps might be brought up to the desired numerical strength of the postwar establishment. In addition to the foregoing, records in this Bureau indicate a marked decrease in the average amount of dental treatment accomplished per dental officer since V-J Day. This postwar slump is inevitable and contingent upon demobilization. However, it should be vigorously combatted.

2. In this connection it is interesting to note the result of a recent study made by the U.S. Public Health Service which was published in part in the Journal of the American Dental Association, Volume 33, Number 1, as follows: "When the one-chair dentist working alone is taken as the base, the weekly patient-load of the two-chair dentist without an assistant is approximately 25 per cent more, that carried by the one-chair dentist with an assistant is 63 per cent higher, while the weekly patient-capacity of the three-chair dentist with an assistant is 75 per cent over the base." From the foregoing it may be computed that when a single dentist working with a single dental operating room and one assistant, the usual naval procedure, is taken as a base, the same dentist working with an additional dental operating room and one assistant will produce approximately 22-1/2 per cent more dental restorations, etc., and when working with two additional dental operating rooms and one assistant, will produce approximately 32 per cent more restorations, etc.

3. In view of the serious shortage of dental officers in the Navy which has resulted in the availability of dental operating rooms ashore in excess of dental officers required to man them on the basis of one dental officer to each dental operating room, and in view of the availability of dental operating rooms afloat in excess of the allowance of dental officers in certain ships, it is directed that the dental officers of all ships and shore activities survey the number of dental operating rooms available and in those cases where it is practicable, without requisitioning new equipment, to assign two or three dental operating rooms to each dental officer under his supervision.

--BuMed. Ross T. McIntire

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Circular Letter 46-127 28 August 1946 (Not Restricted)

To: All Ships and Stations

Subj: BuMed Field Records Schedule; Change No. 1.

Refs: (a) BuMed Field Records Schedule - BuMed CirLtr 45-150 (BuMed Bull CirLtrs July 1939-July 1945).
(b) Sec. VI, Part II, Chapter 2, Manual of the Medical Department, 1945.

1. The following change to reference (a) is effective immediately:

Item 74 - Delete the words "Destroy when 2 years old" and add the word "Retain."

2. When the records enumerated under Item 74 of reference (a) become inactive, or when a ship is decommissioned or an activity is disestablished, they shall be forwarded to the appropriate naval records management center for permanent file.

3. These records should be maintained in a neat and orderly manner so that they will provide an accurate and legible chronological record of each and every patient who reports to a dispensary or sick bay for treatment and should show the individual's full name, rate and service number, the nature of his ailment and treatment prescribed. An entry in the form of a note should be made in the health record of every individual who incurs an injury and is not admitted to the sick list. The pertinent facts relating to the incurrence of the injury, the nature and extent of the injury, treatment administered, and end results should be comprehensively and clearly stated in such entry.

4. The Bureau also desires to emphasize the importance of maintaining complete and accurate health records. In this connection, the attention of all medical officers is invited to the instructions in reference (b).

--BuMed. Ross T. McIntire

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Circular Letter 46-128 28 August 1946 (Not Restricted)

To: ComONE, THREE, FOUR, FIVE, SIX, SEVEN, EIGHT, NINE, ELEVEN, TWELVE, THIRTEEN, SEVERN RIVER COMMAND, POTOMAC RIVER COMMAND.

(Not Restricted)

Subj: Rheumatic Patients Destined for U.S. Naval Hospital, Dublin, Georgia, transportation of.

Ref: (a) MMD, Par. 16B22.

1. Ref (a) designates the Naval Hospital, Dublin Georgia, and the Naval Hospital, Corona, California, for the treatment of rheumatic fever cases and recommends the transfer of rheumatic patients by air.

2. Because of the inaccessibility of Naval Hospital, Dublin, Georgia, to rail transportation, it is urged that air transportation be used where possible for the transfer of patients to U. S. Naval Hospital, Dublin, Georgia.

3. To insure an economy of operation, it is requested that all patients bound for Dublin, Georgia, from hospitals west of Jacksonville be boarded on flight 0326V originating at Moffett Field, California, on MONDAY of each week. Hospitals along the eastern seaboard are requested to board all patients bound for Dublin on flight 0121V on MONDAY of each week. Patients on eastbound hospital flights of the Naval Air Transport Service will be deplaned at NAS, Jacksonville, Florida, to connect with shuttle flights operating from Jacksonville to Dublin. By confining all patients with destination Dublin, Georgia, to the above hospital flights, Naval Air Transport Service can insure maximum speed and efficiency in transportation of rheumatic patients.

4. Rheumatic patients for transfer from the Chicago area will be transported by air, only when the number is sufficient to justify a special flight. Requests for such flights shall be addressed to BuMed for consideration and approval by ComNATS.

--BuMed. Ross T. McIntire

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Circular Letter 46-129

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ALNAV 485 27 August 1946 (Not Restricted)

Subj: Destruction of Certain Lots of Human Serum Albumin on Hand.

Destroy entire amount on hand of Stock Number 1-582-010, Lot Numbers 75-ALB-169 and 75-ALB-170, Cutter Laboratories.

--SecNav. James Forrestal

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ALNAV 468 19 August 1946 (Not Restricted)

Subj: Transferee Appointment Acceptance Time and Benefits

This Alnav concerns transferees to the regular Navy. The attention of all commanding officers is directed to BuPers CirLtrs 123-46, 134-46, 148-46, and 171-46. Commanding officers are directed to effect in accordance with BuPers CirLtr 123-46, appointments of officers listed in the above and future circular letters without delay or to inform BuPers of the reasons for withholding appointments. Any officer who fails to accept his appointment within a period of four months after the date of its publication will be considered to have declined his appointment and will no longer be eligible under the present program. Officers transferring to regular Navy under this program retain accrued leave and if eligible mustering-out pay benefits. Commandants of districts and river commands are directed to give this wide publicity. Commanding officers of separation centers and activities designated to separate personnel are directed to check each officer being processed and if selected notify him of this time limit. --SecNav.

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ALNAV 473 20 August 1946 (Not Restricted)

Subj: Penicillin, Restrictions on Legitimate Use of No Longer Necessary.

Clinical evaluation of penicillin has reached a stage that allows its use as a therapeutic agent to be standardized to a large extent. The greatly expanded production program for penicillin has resulted in making it available in such quantities as to render it no longer necessary to place any restrictions on its legitimate use.

--SecNav. James Forrestal

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ALNAV 474 20 August 1946 (Not Restricted)

Subj: Course in Submarine and Diving Medicine.

Applications are desired to reach BuMed prior 1 October 1946 from medical officers of regular Navy for course in submarine and diving medicine of eight and one half months' duration beginning 7 January 1947 for quota of ten at Submarine Base, New London, Conn., and Deep Sea Diving School, Washington, D. C. Applicants must be physically qualified in accordance with paragraph 21133 Manual of the Medical Department and not over 35 years of

(Not Restricted)

age and free of all chronic disease. Applications must be accompanied by completed form Y. All submarine service is voluntary and applies to medical officers. By submitting application it is understood that applicant agrees to remain in submarine medicine for a period of three years following completion of course; at end of this period medical officers will be assigned to other medical duties upon their request. Submarine and diving training provides basis for later assignment in all branches of medical research and provides training for future research assignments. Applications desired from Lieutenant Commanders and below. Previous training and experience not necessary; however, previous training in physiology is desirable. Applications may be made by dispatch.

--SecNav. James Forrestal

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Circular Letter 46-129 30 August 1946 (Not Restricted)

To: All Ships and Stations

Subj: Optical Technology and Spectacle Dispensing, specialization courses in.

Refs: (a) Catalog of Hospital Corps Schools and Courses, Revised 1944 (NAVMED-367).
(b) Addendum to Catalog of Hospital Corps Schools and Courses, Revised 1944 (NAVMED-367).
(c) BuMed CirLtr 45-17, 20 Jan 1945 (Bull. BuMed CirLtrs July 1939-July 1945 or N.D. Bull. Jan-June 1945, Item 45-85, page 319).

Encl:* 1. (HW) Curriculums, compendiums and qualifications for courses in Optical Technology and Spectacle Dispensing.

1. Specialization courses for enlisted personnel of the Hospital Corps in Optical Technology and Spectacle Dispensing are hereby established and shall be made a part of ref (a). The minimum and desirable qualifications shall be made a part of ref (b).

2. Ref (c) should be modified to include the qualifications for assignment to courses of instruction in Optical Technology and Spectacle Dispensing.

3. Enclosure #1 sets forth the curriculums, compendiums, and minimum and desirable requirements for nomination to these courses.

(Not Restricted)

4. The length of the course in Optical Technology is six (6) months. Spectacle Dispensing is a two (2) months' course, but is accelerated to five (5) weeks until the acute shortage is alleviated. The instruction center for these courses is the U.S. Naval Medical Supply Depot, Brooklyn, New York. A hospital corpsman, who successfully completes the course in Optical Technology, will be designated "Optician." One who completes the course in Spectacle Dispensing will be designated "Spectacle Dispenser."

5. This procedure will not conflict with the pamphlet "Instruction for the Navy Personnel Accounting System" nor the "Manual of Enlisted Navy Job Classifications."

--BuMed. Ross T. McIntire

*Because of its length, the enclosure is not reprinted here.

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Circular Letter 46-130 3 September 1946 (Not Restricted)

To: All Ships and Stations

Subj: Acceptance by Medical Department of Red Cross Supplies and Services.

Ref: BuMed CirLtr JJ57/HJ(013-42), 4 Oct 1943 (Bull of BuM&S CirLtrs, July 1939-July 1945, #43-151, page 100).

1. Reference is hereby cancelled and superseded. Medical and surgical supplies and equipment may be accepted from Red Cross representatives when authorized by the Bureau of Medicine and Surgery or in advance of such authority when an emergency exists. As a rule, however, such supplies and equipment shall not be accepted from the Red Cross when they are obtainable through regular Navy procedure. This policy has no application to the acceptance from the Red Cross of articles for use in the recreation and entertainment or for the comfort of hospital patients in the regular program of the Red Cross pursuant to Article 1474, U. S. Navy Regulations.

2. Medical Department activities normally are expected to process their own dressings, bandages, etc., from materials obtained through the regular naval medical supply channels. However, when commanding officers deem it desirable, local arrangements may be made with Red Cross chapters for the utilization of their services for the preparation of surgical dressings for use in the naval service. When such services are so utilized the supplies and materials to be processed shall be furnished by the naval medical activity concerned.

--BuMed. Ross T. McIntire

Circular Letter 46-131 4 September 1946 (Not Restricted)

To: All Ships and Stations

Subj: Terminal Leave; instructions for handling reporting of patients on sick list.

Refs: (a) ALNAV 445-46.
(b) ALNAV 467-46.
(c) MMD 233.4(b).
(d) MMD 233.6(d).
(e) MMD 235.2(g).
(f) MMD 235.6(b).
(g) MMD 236.2(a).
(h) MMD 237.17.

1. Patients awaiting IS (INVALIDING FROM THE SERVICE) or who, under other circumstances are to be granted terminal leave under the provisions of refs (a) and (b), shall, for purposes of Fa procedure (Individual Statistical Report of Patient), be handled in the same manner as directed for convalescent leave in refs (c), (d), (e), (f), (g), and (h).

2. At the time the patient is to commence terminal leave, the case shall be disposed of from the sick list as C (DIAGNOSIS CHANGED) with the current diagnosis, and immediately taken up as AD (ADDITIONAL DIAGNOSIS) under NO DISEASE (TERMINAL LEAVE) (2143) and disposed of as T (TRANSFERRED) to terminal leave.

3. At the conclusion of terminal leave, the responsible medical activity shall take up the patient as FT (FROM TRANSFER) with diagnosis NO DISEASE (TERMINAL LEAVE) (2143), even though for record only. The case shall, then be disposed of from the sick list in whichever method as directed in the Manual of the Medical Department is applicable.

--BuMed. Ross T. McIntire

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Circular Letter 46-132 4 September 1946 (Not Restricted)

To: MedOfCom NavHosp and All Activities with Dispensaries of 25 or More Beds.

Subj: NAVMED I (Weekly Report of Patients)((5-45) Revision); addition to.

(Not Restricted)

1. Effective 18 Sep 1946, it is directed that in Part II of subject report immediately preceding the "Total" column, an additional column be added with the heading "K Casualties." In this added column, it is directed that all persons on the sick list because of a war wound (key letter "K" casualty) or any complication thereof, be reported.

2. Because of the importance at this time of having a complete weekly breakdown of war casualties still on the sick list, this procedure shall be continued as long as any "K" casualties remain under the care of the Medical Department.

--BuMed. W.J.C. Agnew

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(Not Restricted)

Disestablishment of Naval Medical Activities: As published in the Navy Department Semimonthly Bulletin of 15 August 1946, the following Naval Medical activities were disestablished as of the dates shown:

Name	Location	Date of Disestablishment
U.S. Naval Medical Storehouse #3	Naval Operating Base Adak, Alaska	1 September 1946
U.S. Naval Medical Supply Storehouse	Municipal Pier #1 San Pedro, Calif.	1 January 1947

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